Appendix A

The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
Bureau of Environmental Health Assessment
250 Washington Street, Boston, MA 02108-4619

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HOWARD K. KOH, MD, MPH
COMMISSIONER

November 28, 2000

Bill Corliss
Massachusetts Department of Mental Health
Central Office
25 Staniford Street
Boston, MA

Dear Mr. Corliss:

At your request, the Bureau of Environmental Health Assessment (BEHA) conducted an evaluation of the indoor air quality at the Massachusetts Department of Mental Health (DMH), South Worcester Local Service Site, 40 Institute Road, Grafton, MA on November 7, 2000. Michael Feeney, Chief of the Emergency Response/Indoor Air Quality (ER/IAQ) program, conducted the assessment. Mr. Feeney was accompanied by Rita Trombley, DMH and for portions of the assessment by Susan Sciaraffa-Carey, Site Director, DMH. During the course of this assessment, DMH personnel reported that replacement of the building's heating system is planned (C.A. Crowley Engineering, 1998). The heating system replacement would include capping of the existing steam pipes in the mechanical room on the ground floor and the installation of a boiler in this general area. These renovations would entail at a minimum:

1. the destruction/removal of masonry in the mechanical room,
2. the installation of piping requiring welding, and
3. excavation around the foundation.

Each of these activities will likely produce irritating dusts, fumes, vapors and gasses. These activities are planned to be done while the building remained occupied. Due to the configuration of the building, the condition of the heating, ventilating and air-conditioning (HVAC) system, and location of DMH employees in close proximity to the mechanical room first floor, it is likely that pollutants generated during the heating system renovation will likely to enter the occupied spaces of both floors of the building.

In order to prevent renovations from impacting DMH employees, the following recommendations should be implemented in order to reduce the migration of renovation generated pollutants into occupied areas:

1. Relocate employees in the immediate area of the mechanical room to other space within the building until renovations are complete.

2. Establish communications between all parties involved with building renovations to prevent potential IAQ problems. Develop a forum for occupants to express concerns about renovations as well as a program to resolve IAQ issues.

3. Develop a notification system for building occupants immediately adjacent to construction activities to report construction/renovation related odors and/or dusts problems to the building administrator. Have these concerns relayed to the contractor in a manner to allow for a timely remediation of the problem.

4. When possible, schedule projects which produce large amounts of dusts, odors and emissions during unoccupied periods or periods of low occupancy.

5. Disseminate scheduling itinerary to all affected parties, this can be done in the form of meetings, newsletters or weekly bulletins.

6. Obtain Material Safety Data Sheets (MSDS) for all construction materials used during renovations and keep them in an area that is accessible to all individuals during periods of building operations as required by the Massachusetts Right-To-Know Act (MGL, 1983).

7. Consult MSDS' for any material applied to the effected area during renovation(s) including any sealant, carpet adhesive, tile mastic, flooring and/or roofing materials. Provide proper ventilation and allow sufficient curing time as per the manufacturer's instructions concerning these materials.

8. Use local exhaust ventilation and isolation techniques to control for renovation pollutants. Precautions should be taken to avoid the re-entrainment of these materials into the building's HVAC system. The design of each system must be assessed to determine how it may be impacted by renovation activities. Specific HVAC protection requirements pertain to the return, central filtration and supply components of the ventilation system. This may entail shutting down systems (when possible) during periods of heavy construction and demolition, ensuring systems are isolated from contaminated environments, sealing ventilation openings with plastic and utilizing filters with a higher dust spot efficiency where needed (SMACNA, 1995).

9. Seal utility holes, HVAC system vents, spaces in roof decking and temporary walls to eliminate pollutant paths of migration. Seal holes created by missing tiles in ceiling temporarily to prevent renovation pollutant migration.

10. Seal construction barriers with polyethylene plastic and duct tape to create a secondary barrier to prevent migration of renovation generated pollutants into occupied areas.

11. Use a waterproof plastic mat over carpeting as a pathway leading from the renovation area in order to prevent dust transfer from shoes and aid in cleaning/dust control.

12. If possible, relocate susceptible persons and those with pre-existing medical conditions (e.g., hypersensitivity, asthma) away from areas of renovations until they are completed.

13. Implement prudent housekeeping and work site practices to minimize exposure to renovation pollutants. This may include constructing barriers, sealing off areas, and temporarily relocating furniture and supplies. To control for dusts, a high efficiency particulate air filter (HEPA) equipped vacuum cleaner in conjunction with wet wiping of all surfaces is recommended.

14. Close windows adjacent to construction activities to prevent unfiltered air from entering the building.

We generally suggest that these steps be taken on any renovation project within a public building. Please feel free to contact us at (617) 624-5757 if you are in need of further information or technical assistance.

Sincerely,

Suzanne Condon, Assistant Commissioner
Bureau of Environmental Health Assessment

cc/ Mike Feeney, Chief, Emergency Response/Indoor Air Quality
Susan Sciaraffa-Carey, Site Director, DMH
Rita Trombley, DMH

References

C.A. Crowley Engineering. 1998. Blueprints for Massachusetts State project No. MSP MH971, Contract No. HC1 New Boilers at Oaks A, B, and D Grafton State Hospital, Grafton, MA. C.A. Crowley Engineering, Middleborough, MA.

MGL. 1983. Hazardous Substances Disclosure by Employers. Massachusetts General Laws. M.G.L. c. 111F.

SMACNA. 1995. IAQ Guidelines for Occupied Buildings Under Construction. 1st ed. Sheet Metal and Air Conditioning Contractors' National Association, Inc., Chantilly, VA.